Idaho Disease

BULLETIN

Volume 8 Number 4 ***Division of Health*** ***December, 2002***

Smallpox Vaccination Planning Beginning in Idaho

An intentional release of smallpox could potentially be devastating to the nation's health. Planning on how to respond to such an attack is ongoing in the nation and in Idaho. Two major planning efforts are underway: the first addresses pre-vaccinating community- and hospital-based smallpox response teams, which would be available to respond to, investigate, and treat suspected smallpox cases, should they arise. The second effort is addressing the potential need to vaccinate larger groups of citizens in case a release of smallpox is confirmed.

Currently, the major focus is on the pre-vaccination effort of designated smallpox teams. Much work is yet to be done in eliciting health-care and public health volunteers for these teams. The effort will be spearheaded by the district health departments in concert with regional hospital planning groups.

Physicians will be inundated with information about smallpox in the next few months; efforts are being made by several national medical societies, the Centers for Disease Control and Prevention, and others to educate physicians and other health care workers about smallpox, the smallpox vaccine, and the national strategy for defense against possible bioterrrorist attack.

What is lacking at present is a final policy decision from the Department of Health and Human Services on how much vaccine will be released and how exactly vaccination would be carried out, final recommendations on screening persons being considered for smallpox vaccination (e.g., HIV screening), and liability if adverse reactions occur. What seems apparent, however, is that some type of smallpox vaccine program will be initiated within the next few months in the United States, and that physicians will be asked to weigh in on this very important issue as it evolves.

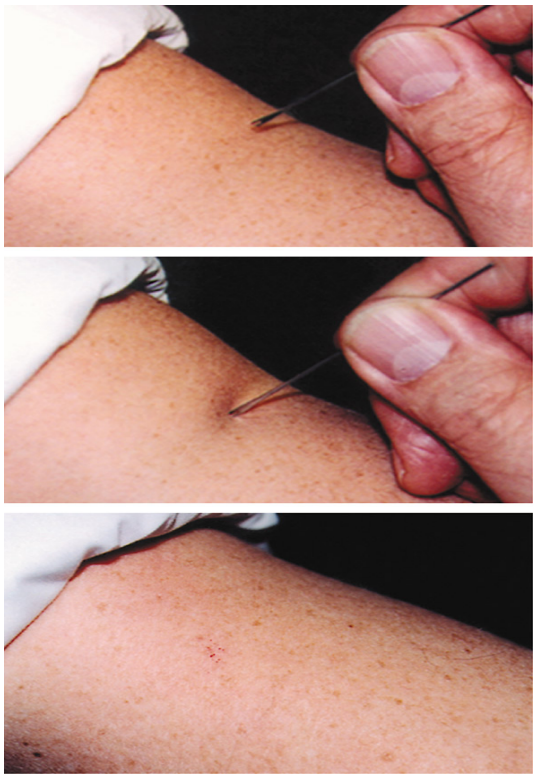


Figure: Smallpox vaccination using the tripartite scarification method shown above.

More inside

If you are interested in becoming part of a smallpox preparedness team, which includes vaccination and education about smallpox, please contact your district health department for information. In addition, if you have experience in evaluating or treating smallpox cases, we would like to hear from you. Please contact Dr. Christine Hahn at the Idaho Division of Health or your district health department to have your name included as a physician resource for smallpox education for other physicians, or response should a case of smallpox ever be diagnosed in Idaho. Dr. Hahn will also be presenting on smallpox for several upcoming medical grand rounds in Idaho—please consider attending to increase your awareness of this disease, and how physicians may be involved in smallpox preparedness efforts.

Pertussis Testing in Idaho

Idaho continues to struggle with high rates of pertussis. In addition, poor sensitivity and/or specificity of available tests make suspected cases difficult to confirm. To make matters even more complicated, the clinical picture is often non-specific, especially in adults, requiring a high degree of awareness by providers. Vaccinated persons, especially adults whose immunity has waned, can circulate *B. pertussis* within the population via colonization and subclinical infection. In both types of populations, epidemic cycles of pertussis occur every 2 to 5 years. Laboratory testing for pertussis remains a challenge; no single FDA-approved test is both highly sensitive and specific for this disease. Following is a summary and comparison of testing methods available for pertussis.

Laboratory Diagnosis of Pertussis

Collection of specimens: Nasopharyngeal aspirates or nasopharyngeal swabs (calcium alginate for culture; rayon or dacron, NOT cotton, for PCR) are required for testing. The use of throat swabs is less suitable, since *B.pertussis* exhibits a tropism for ciliated respiratory epithelium, which is not found in the pharynx.

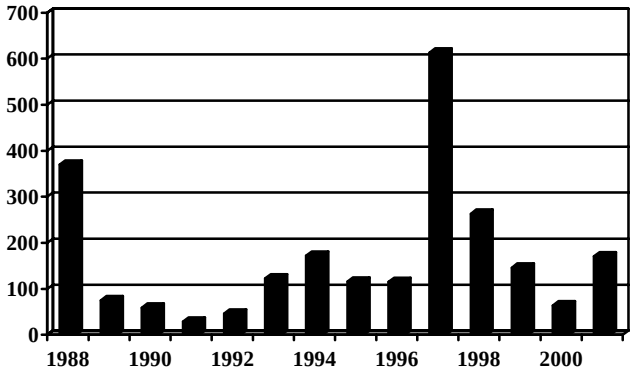
DFA (Direct Fluorescent Antibody)

- Will detect organisms, viable or not
- 24-hour lab turn around time
- Specificity of monoclonal antibody reagents was poor during a recent suspected outbreak. DFA has been temporarily discontinued at the State Bureau of Labs while this is evaluated, but continues to be available at some commercial laboratories.

CULTURE (the Gold Standard)

- Approximately a 10-day lab turn around
- *B.pertussis* can be isolated from up to 80% of NP swabs during the catarrhal phase; however, isolation of viable organisms decreases with time during the paroxysmal phase, the time when most patients present for medical care, making the sensitivity of this test poor.
- A negative culture: interpreted as a loss of sample viability or a lack of organisms.
- Culture alone for the lab diagnosis of *B. pertussis* has always fallen short as a sole diagnostic tool. However, this test is considered highly specific for the disease in coughing persons and can confirm an outbreak if multiple positive cultures are obtained.

Idaho *B. pertussis* cases, 1988-2001



PCR (Polymerase Chain Reaction)

- Not FDA approved. PCR is undergoing validation at the State Bureau of Laboratories, and must be done in conjunction with culture and clinical data.
- 48-hour lab turn around time
- Can be rapid, sensitive, and specific
- PCR may provide results for patients on antibiotics and in later stages of illness, as organism viability is not important.

Serology:

- PT and FHA are the two major surface antigens (PT is the only antigen specific for *B.pertussis,* FHA may cross-react with nonencapsulated *H.influenzae* antigens affecting serologic interpretation).
- Immune reactions against PT and FHA can be detected in >90% of infected patients and low levels of antibody may be found in healthy persons; therefore, quantitative assessment is essential utilizing paired sera.
- For adults with pertussis, serology is often the most important diagnostic tool, since these patients often present too late in the disease for other tests to be positive.

Sample submission:

To maximize the likelihood of testing viable microorganisms via culture, specimens are plated onto culture media immediately. When the specimen is not plated until the day after it is collected or later, Regan-Lowe transport medium is inoculated and transported at 4 degrees C.

Laboratory confirmation of pertussis is affected by many variables. For answers to questions regarding the problems and issues associated with the laboratory diagnosis of pertussis, call the State of Idaho Bureau of Laboratories, Medical Microbiology Section, at (208)334-2235 ext. 257, 259, or 244.

Influenza Update: November 2002

There have been some interesting developments this year regarding influenza vaccination. New "Recommendations for the Prevention and Control of Influenza" were published in April 2002 (April 12, 2002 / 51(RR03); 1-31).

Several changes and updates are described below:

- The optimal time to receive influenza vaccine is during October and November; however, vaccination efforts for all groups should continue into December and later, for as long as vaccine is available and influenza is circulating. During the past 2 years, with vaccine supply delay, ACIP recommended that early vaccination efforts focus on persons at greatest risk for influenza-related complications and health-care workers and that vaccination of other groups be delayed until November. FDA reports that no delay in vaccine delivery is anticipated this flu season, and an ample quantity of vaccine is projected.

- Vaccination of children aged ≥6 months who have certain medical conditions continues to be strongly recommended. In addition, young, otherwise healthy children are at increased risk for influenza-related hospitalization, therefore, influenza vaccination of healthy children aged 6--23 months is encouraged when feasible.

- A limited amount of influenza vaccine with reduced thimerosal content will be available for the 2002--2003 influenza season

The Office of Epidemiology Welcomes Dr. Kris Carter

Kris Carter, DVM, MPVM, joined our office in August 2002 for a two-year training program. Dr. Carter is participating in the CDC-sponsored applied epidemiology training program called the epidemic intelligence service (EIS). Dr. Carter already comes with much epidemiology training from her time in the California Department of Health Services. She is interested in honing her skills as an epidemiologist by tracking reportable diseases, assisting with outbreak investigations, and participating in many other aspects of applied epidemiology. Dr. Carter is also an avid birder and very interested in the Idaho outdoors. We are glad to have her here for the next two years.

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